(IK)

OIPE

RAW SEQUENCE LISTING

3 ::110> APPLICANT: Steinaa, Lucilla

PATENT APPLICATION: US/09/806,703A

DATE: 11/16/2001 TIME: 15:05:16

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Output Set: N:\CRF3\11162001\1806703A.raw

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Mouritsen, Soren
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              Gautam, Anand
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      6
              Dalum, Iben
      7
              Haaning, Jesper
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              Leach, Dana
      9
              Nielsen, Klaus
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              Karlsson, Gunilla
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              Rasmussen, Peter
     13 <120> TITLE OF INVENTION: Novel Methods for Therapeutic Vaccination
     15 <130> FILE REFERENCE: 3631-0109P
     17 <140> CURRENT APPLICATION NUMBER: US 09/806,703A
     18 <141> CURRENT FILING DATE: 2001-04-04
     20 <150> PRIOR APPLICATION NUMBER: PCT/DK99/00525
     21 <151> PRIOR FILING DATE: 1999-10-05
     23 <150> PRIOR APPLICATION NUMBER: DK 1998 01261
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     26 <150> PRIOR APPLICATION NUMBER: US 60/105,011
     27 <151> PRIOR FILING DATE: 1998-10-20
     29 <160> NUMBER OF SEQ ID NOS: 41
     31 <170> SOFTWARE: PatentIn Ver. 3.0
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     41 <223> OTHER INFORMATION:
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     51 1
                        5
                                             10
                                                                 15
     52 aga aag aga tig atig tiga gat igag gag atig gtig atig gag igga atta
                                                                                96
     53 Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly Gly Phe
     55 ttt etc etc gge tte etc tte ggg tgg ttt ata aaa tec tec aat gaa
                                                                               144
     56 Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser Ser Asn Glu
                35
                                    40
                                                                               192
     58 gct act aac att act cca aag cat aat atg aaa gca ttt ttg gat gaa
     59 Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala Phe Leu Asp Glu
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                                                                               240
     61 ttg aaa get gag aac atc aag aag tte tta tat aat ttt aca cag ata
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6.5	Pro	His	Leu	Ala	Gly	Thr	Glu	Gln	Asn	Phe	Gln	Leu	Ala	Lys	Gln	Ile	
66					85					90					95		
67	caa	tcc	cag	tgg	aaa	gaa	ttt	ggc	ctg	gat	tct	gtt	gag	cta	gca	cat	336
68	Gln	Ser	Gln	Trp	Lys	Glu	Phe	Gly	Leu	Asp	Ser	Val	Glu	Leu	Ala	His	
69				100					105					110			
70	tat	gat	gtc	ctg	ttg	tcc	tac	cca	aat	aag	act	cat	CCC	aac	tac	atc	384
7.1	Tyr	Asp	Val	Leu	Leu	Ser	Tyr	Pro	Asn	Lys	Thr	His	Pro	Asn	Tyr	Ile	
72	•	•	115				-	120		-			125				
7.3	t.ca	ata	att	aat	gaa	gat	aga	aat	qaq	att	ttc	aac	aca	tca	tta	ttt	432
															Leu		
7.5		130				1	135					140					
	паа		cct	cct	cca	aga		паа	aat	att	tca		att	ata	cca	cct	480
	-							-							Pro		
	145	110	110	110	110	150	111	O.L.u	11511	, ar	155	пор	110	• • •	110	160	
		ant	act	tta	tat		caa	(T) T =	ato	cca		aac	crat	ota	gtg		528
		_	_						-				-		Val		320
	Pne	ser	нта	Рпе		PIO	/3 T I I	ЭТХ	Mec		13 LU	Gry	ASP	Lea	175	тут	
81					165				++-	170		++~	~	~~~		a + ~	E76
	-				_										gac		576
	Val	Asn	Tyr		Arg	Thr	GIU	Asp		Pne	Lys	Leu	GIU		Asp	мет	
84				180					185					190			66.4
															aaa		624
	Lys	He		Cys	Ser	Gly	Lys		Val	He	Ala	Arg		GTA	Lys	Val	
87			195					200					205				
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89	Phe	Arg	Gly	Asn	Lys	Val	Lys	Asn	Ala	Gln	Leu	Ala	Gly	Ala	Lys	Gly	
90		210					215					220					
91	gtc	att	ctc	tac	tcc	gac	cct	gct	gac	tac	ttt	gct	cct	ggg	gtg	aag	720
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93	225					230					235					240	
94	tcc	tat	cca	gat	ggt	tgg	aat	ctt	cct	gga	ggt	ggt	gtc	cag	cgt	gga	768
95	Ser	Tyr	Pro	Asp	Gly	Trp	Asn	Leu	Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	
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97	aat	atc	cta	aat	ctg	aat	ggt	qca	qqa	gac	cct	ctc	aca	cca	ggt	tac	816
															Gly		
99				260			-		265	_				270	_	_	
100) cca	ı qca	aat	gaa	ı tat	. act	tat	ago	a cat	. वव	att	. qca	qaq	get	gtt	ggt	864
															a Val		
102			275		1		_	280		, 1			285			•	
		cca			cct	att	cat			aaa	tac	: tat			а сао	aag	912
															a Gln		
105		290				, , , ,	295		, 110	. 011	- 1 -	300			. 011	2,0	
				222	ato	aa+			a deca	CC3	CC			· acr	c tgg	aga	960
															r Trp		, , ,
	305		. GIU	гга	, riet	. Gry 310	_	Ω∈1	. AIG		315	_	, oer	261		320	
			a+ =		· ~+~				+				, +++	201			1008
															gga colu		1000
11(GLY	ser	Leu	глаг	val	Pro	э туг	AST	ı val	. СТУ	PIC	і СТУ	Fue	1 I I I	Gly	ASII	

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					205					220					225		
111					325					330					335		1055
							aag										1056
	Phe	Ser	Thr		Lys	Val	Lys	Met		He	His	Ser	Thr		Glu	Val	
114				340					345					350			
		-					ata										1104
116	Thr	Arg	Ile	Tyr	Asn	Val	Ile	Gly	Thr	Leu	Arg	Gly	Ala	Val	Glu	Pro	
117			355					360					365				
							gga										1152
119	Asp	Arg	Tyr	Val	Ile	Leu	Gly	Gly	His	Arg	Asp	Ser	Trp	Val	Phe	Gly	
120		370					375					380					
121	ggt	att	gac	cct	cag	agt	gga	gca	gct	gtt	gtt	cat	gaa	att	gtg	agg	1200
122	Gly	Ile	Asp	Pro	Gln	Ser	Gly	Ala	Ala	Val	Val	His	Glu	Ile	Val	Arg	
123	385					390					395					400	
124	agc	ttt	gga	aca	ctg	aaa	aag	gaa	ggg	tgg	aga	cct	aga	aga	aca	att	1248
125	Ser	Phe	Gly	Thr	Leu	Lys	Lys	Glu	Gly	Trp	Arg	Pro	Arg	Arg	Thr	Ile	
126			_		405				_	410					415		
127	ttg	ttt	gca	age	tgg	gat	gca	gaa	gaa	ttt	ggt	ctt	ctt	ggt	tct	act	1296
							Āla										
129				420	•	-			425		-			430			
130	gag	taa	qca	qaq	qaq	aat	tca	aga	ctc	ctt	caa	gag	cqt	qqc	qtq	qct.	1344
			_				Ser										
132			435					440					445	_			
	t.a.t.	att.	aat.	act.	gac	t.ca	tct	ata	gaa	gga	aac	tac	act	cta	aga	att	1392
							Ser										
135	-1-	450					455			1		460			,		
	gat.		aca	cca	cta	atq	tac	agc	tta	qta	cac	aac	cta	aca	aaa	gag	1440
	_	_			_	_	Tyr		_	_							
138	_	O _I B			1300	470	-1-	001	200		475		200		270	480	
		aaa	agc	cct	gat		ggc	+++	gaa	aac		tct	ctt	tat	gaa		1488
							Gly										1.00
141	Lea	2,5	DCI	110	485	014		1110	OLG	490		001	Dou	- 1 -	495	DOI	
	taa	act	aaa	aaa		cct	tcc	cca	σασ		agt	aac	atα	CCC		ata	1536
					-		Ser				_		_				1333
144	111	1111	БүЗ	500	JCI	110	JCI	110	505	1110	DCI	Oly	MUC	510	1119	110	
	anc	222	tta		tet	aaa	aat	gat		σασ	ata	ttc	ttc		сда	ctt	1584
	_						Asn	_							-		1304
147	261	ьуз	515	Gry	261	СТУ	ASII	520	rne	Giu	Val	rne	525	GIII	Arg	Leu	
	aaa	a++		tca	aac	ana	gca		tat	act	aaa	aat		gaa	aca	aac	1632
			_			_	Ala							_			1002
150	GIY	530	Ala	Set	GIY	ALG	535	Alg	1 Y 1	1111	цуз	540	111	GIU	1111	ASII	
	222		200	999	+ - +	000		+ > +	020	201	ata		a 2 2	202	+ > +	a 2 a	1680
							ctg										1000
	_	Pile	261	GIY	тут		Leu	1 7 1	птъ	ser	555	TYL	GIU	TILL	тут		
153		at a	<i>a</i> = =	227	+++	550	a > +	000	2+~	+++		+ > +	020	ata	a a t	560	1720
	_	-	-				gat		_								1728
	Leu	v d l	GIU	гля		т Лт,	Asp	PLO	met		гуѕ	TÀT	nis	Leu		val	
156			~++		565	~	~ + ~	~+~	+++	570	a+ =	a.c.a	22+	+	575	a+-	1776
							atg										1776
	Ala	GIN	va⊥		GIY	GIA	Met	val		GLU	Leu	Ата	asn		тте	va⊥	
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	4 Asp		Ile	Tyr	Ser	Ile		Met	Lys	His	Pro		Glu	Met	Lys	Thr		
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	6 tac	-	-			-					-	-	-					1920
	7 Tyr	Ser	Val	Ser	Phe	_	Ser	Leu	Phe	Ser		Val	Lys	Asn	Phe			
	8 625					630					635					640		1000
	9 gaa 0 Glu																	1968
17		rre	Ald	ser	645	PHE	ser	() LU	Alg	650	GIII	изр	Phe	ASP	655	ser		
	ı 2 aac	cca	ata	αta	-	ада	ato	atα	aat		саа	ctc	ato	+++		паа		2016
	3 Asn						_	_		-			_		_	-		2010
17		110	110	660	Lu	1119	1100	1100	665	пор	OIII	LCu	1100	670	БСС	Olu		
	5 aga	qca	ttt		gat	сса	tta	aaa		сса	gac	agg	cct		tat	agg		2064
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17	-		675		1			680			1	5	685		- 2	,		
17	8 cat	gtc	at.c	tat	gct	cca	agc	agc	cac	aac	aag	tat	gca	ggg	gag	tca		2112
17	9 His	Val	Ile	Tyr	Āla	Pro	Ser	Ser	His	Asn	Lys	Tyr	Ala	Gly	Glu	Ser		
18)	690					695					700						
	l titc																	2160
	2 Phe	Pro	Gly	Ile	Tyr	Asp	Ala	Leu	Phe	Asp	Ile	Glu	Ser	Lys	Val			
	3 705					710					715					720		
	1 cct		-	**			-		_	_	_			-	-			2208
	5 Pro	Ser	Lys	Ala		Gly	Glu	Val	Lys		Gln	He	Tyr	Val		Ala		
180					725	+				730					735			2252
	7 ttc			_	-	-									taa			2253
18	3 Phe	1111	vaı	740	Ala	АТа	Ald	GIU	745	Leu	ser	Glu	Val	750				
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	7 Phe	Leu		GLy	Phe	Leu	Phe	-	Trp	Phe	He	Lys		Ser	Asn	GLu		
208		m 1	35	T1 -	T b	D == -	T	40	7	Mak	т	x 1 -	45	T	λ	/3.1		
	Ala		ASN	ше	ınr	Pro	Lys 55	HIS	asn	мет	LYS	A1a 60	rne	Leu	ASP	IJLU		
210	l Leu	50	λla	Clu	λαη	Tlo		Lvc	Dha	Lou	T17 *		Dho	Thr	Cln	rla		
4 1 1	— .		$\Delta \cdot a$	11111	$\alpha > 11$	r + c	レッシ	TI A D	rne	Leu	TVI	DOLL	r IIC	TIIT	TITE	115		
0.11	65	Lju				70	4	1			75					80		

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213 214	Pro	His	Leu	Ala	Gly 85	Thr	Glu	Gln	Asn	Phe 90	Gln	Leu	Ala	Lys	Gln 95	Ile
	Gln	Ser	Gln	Ггр 100	Lys	Glu	Phe	Gly	Leu 105	Asp	Ser	Val	Glu	Leu 110	Ala	His
	Tyr	Asp	Val 115	Leu	Leu	Ser	Tyr	Pro 120	Asn	Lys	Thr	His	Pro 125	Asn	Tyr	Ile
	Ser	Ile 130		Asn	Glu	Asp	Gly 135	Asn	Glu	Ile	Phe	Asn 140	Thr	Ser	Leu	Phe
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		Ser	Ala	Phe	Ser 165		Gln	Gly	Met	Pro 170		Gly	Asp	Leu	Val 175	
	Val	Asn	Tyr	Ala 180		Thr	Glu	Asp	Phe 185		Lys	Leu	Glu	Arg 190		Met
	Lys	Ile	Asn 195		Ser	Gly	Lys	11e 200		Ile	Ala	Arg	Tyr 205		Lys	Val
	Phe	Arg 210		Asn	Lys	Val	Lys 215	Asn	Ala	Gln	Leu	Ala 220		Ala	Lys	Gly
	Val 225		Leu	Tyr	Ser	Asp 230	Pro	Ala	Asp	Tyr	Phe 235	Ala	Pro	Gly	Val	Lys 240
		Tyr	Pro	Asp	Gly 245	Trp	Asn	Leu	Pro	Gly 250	Gly	Gly	Val	Gln	Arg 255	Gly
	Asn	Ile	Leu	Asn 260	Leu	Asn	Gly	Ala	Gly 265	Asp	Pro	Leu	Thr	Pro 270	Gly	Tyr
	Pro	Ala	Asn 275		Tyr	Ala	Tyr	Arg 280	Arg	Gly	Ile	Ala	Glu 285	Ala	Val	Gly
	Leu	Pro 290		Ile	Pro	Val	His 295	Pro	Ile	Gly	Tyr	Tyr 300	Asp	Ala	Gln	Lys
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		Ser	Leu	Lys	Val 325	Pro	Tyr	Asn	Val	Gly 330	Pro	Gly	Phe	Thr	Gly 335	Asn
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$\frac{247}{248}$	Thr	Arg	Ile 355	Tyr	Asn	Val	Ile	Gly 360	Thr	Leu	Arg	Gly	Ala 365	Val	Glu	Pro
249 250	Asp	Arg 370	Tyr	Val	Ile	Leu	Gly 375	Gly	His	Arg	Asp	Ser 380	Trp	Val	Phe	Gly
	Gly 385	Ile	Asp	Pro	Gln	Ser 390	Gly	Ala	Ala	Val	Val 395	His	Glu	Ile	Val	Arg 400
253 254	Ser	Phe	Gly	Thr	Leu 405	Lys	Lys	Glu	Gly	Trp 410	Arg	Pro	Arg	Arg	Thr 415	Ile
255 256	Leu	Phe	Ala	Ser 420	Trp	Asp	Ala	Glu	Glu 425	Phe	Gly	Leu	Leu	Gly 430	Ser	Thr
257 258	Glu	Trp	Ala 435	Glu	Glu	Asn	Ser	Arg 440	Leu	Leu	Gln	Glu	Arg 445	Gly	Val	Ala
$\frac{259}{260}$	Tyr	Ile 450	Asn	Ala	Asp	Ser	Ser 455	Ile	Glu	Gly	Asn	Tyr 460	Thr	Leu	Arg	Val
	Asp		Thr	Pro	Leu	Met	Tyr	Ser	Leu	Val	His	Asn	Leu	Thr	Lys	Glu

VERIFICATION SUMMARY

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